

Section 4: Guide Plates

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Patient Areas

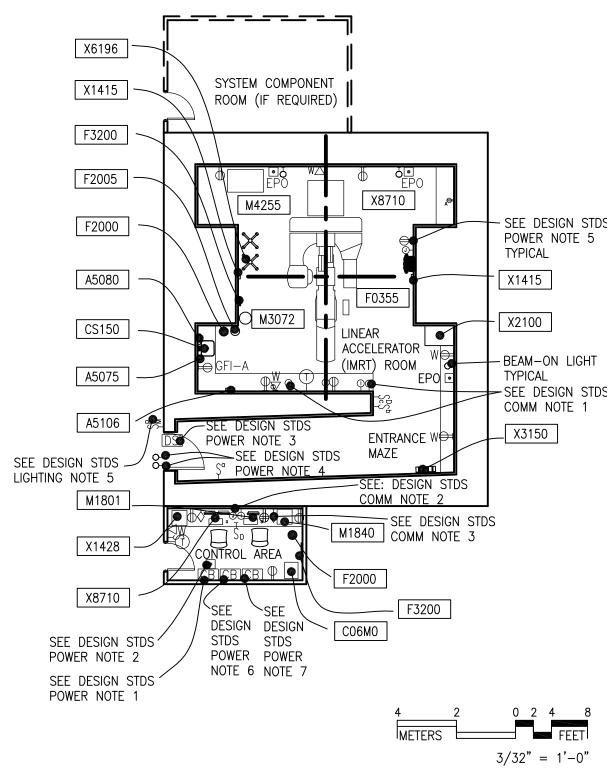
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Treatment Planning Computer Room- Dosimetry Room

Floor Plan

Linear Accelerator Room & Control Area (XTLA1) (XTLC1)

975 NSF

90.6 NSM



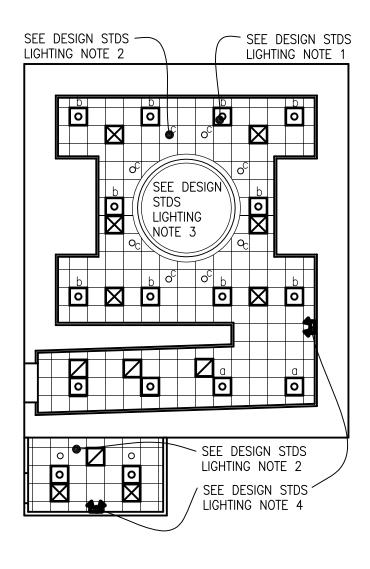


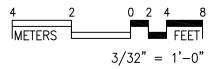
Linear Accelerator Room & Control Area (XTLA1) (XTLC1)

975 NSF

Reflected Ceiling Plan

90.6 NSM





The locations and quantities of the air outlets and inlets are tentative and may not represent the optimum design solution(s) envisioned by the designer, who shall study the layout, calculate air volumes, and may alter the arrangement shown in the reflected ceiling plan, as required, to produce a project—specific air distribution system design.



LINEAR ACCELERATOR (IMRT) ROOM (XTLA1): Design Standards

ARCHITECTURAL

Ceiling: Acoustical Tile Ceiling
Ceiling Height: Coordinate with

Equip. Manufacturer

Wall Finish:

Wainscot:

Base:

Floor Finish:

Sound Protection:

Paint

Paint

Integral Cove Base

Seamless Sheet

Notes:

- 1. Provide a 4'-0" electro-pneumatic operated neutron shielded door into the Linear Accelerator Room.
- 2. Consider use of a special design feature to reduce the patient stress level associated with this procedure

LIGHTING

Treatment Room

General: Fluorescent lights will provide higher illumination level up to 75 FC during patient transfer on and from the table, equipment setting, room cleaning, and equipment maintenance.

Special: Incandescent dimmable 'setup lighting' luminaires controlled by dimmer will provide lower illumination levels down to 10 FC during the laser positioning and treatment. Luminaires shall be located to avoid direct glare for patient comfort.

Decorative ceiling illumination is provided for patient comfort during treatment.

Control Room

General: Fluorescent lights will provide higher illumination level up to 30 FC.

Special: Incandescent luminaires controlled by dimmer will provide lower illumination levels down to 5 FC during treatment procedure scanning for monitor viewing.

Notes:

 2'x2' fluorescent recessed luminaire, acrylic prismatic lens, with (3) FB031T8-U lamps, 4100 K, CRI=85 (minimum).

- 2. 8-inch dia., recessed incandescent downlight, with recessed Fresnel lens, and 150W/A21 inc. horizontally mounted lamp.
- 3. Decorative ceiling illumination and features to be determined.
- 4. Dual head emergency battery pack
- 5. Master switch with pilot light for control of treatment room lights, set-up lights, laser positioning lights, and CCTV system via Relay box.

POWER

General: The electrical power as shown is to be used as a guide only. Equipment locations, dimensions and wiring requirements should be per the Linear Accelerator system suppliers' equipment drawings. Step down transformer, power conditioner, UPS unit may be required. Electrical trades should provide all necessary conduits, openings, bushings, nipples, flexible conduits, surface, recessed, wall mounted and floor raceways, etc., as required at the various junction boxes, duct and conduit terminations to allow proper connections of the treatment equipment and related accessories

Emergency: Emergency power for linear accelerator equipment, controls, and selected receptacles as determined by the Hospital

Notes:

- 250V, 3P-150A main circuit breaker, with adjustable trip, shunt trip and under-voltage relay, flush mounted for linear accelerator.
- 2. Emergency Power Off pushbutton station; connect to shunt trip at main breaker. Do not locate in the primary beam area.
- 3. Door switch with NO/NC contacts. Connect to the system control circuit.
- 4. "BEAM ON" and 'BEAM READY" warning lights. Provide interface with controller via interface relay to match Linear Accelerator equipment requirements. Locate BEAM-ON light next to EPO.



Guide Plates

- 5. Laser positioning light interlocked with room lighting and set-up lights; provide adjacent receptacle.
- 6. 480V, 3P-60A circuit breaker, with adjustable trip, shunt trip, flush mounted for On-Board Imager (optional).
- 7. 120V, 1P-30A circuit breaker for operator's console UPS unit.
- 8. 480V, 3P-60A disconnect switch for chiller unit; locate in field.
- 9. 480V, 3P-30A disconnect switch for air conditioning unit; locate in field.

COMMUNICATION/SPECIAL SYSTEMS

ADP: Yes Data: Yes Telephone: Yes Intercom: Yes Nurse Call: Public Address: Radio/Entertainment: MATV: CCTV: Yes MID: Security/Duress: VTEL: VA Satellite TV:

Notes:

- 1. Junction box for CCTV camera with conduit to Control area.
- 2. Junction box for CCTV monitor.
- 3. PACS:two 4-port telecommunication outlets per PACS station

HEATING, VENTILATING AND AIR CONDITIONING

Inside Design Conditions:

70° F to 75° F (21° C to 24° C). 30% to 60% Relative Humidity

Minimum Air Changes/Hr. – Supply Air: 8
100% Exhaust: No
100% Outside Air: No

Room Air Balance:

Equal for Linear Accelerator Room Positive for Control Room

Dedicated Exhaust System: No Occupancy: 3 for Linear Accelerator Room 4 for Control Room

AC Load-Equipment: 28,000 Btuh (8,250 W) for Linear Accelerator Room 8,000Btuh (2,400 W) for Control Room

AC Load-Lighting: 1.3 W/SF (14 W/M²) in

Linear Accelerator Room

1.6 W/SF (17 W/M²) in Control Room

Notes:

- 1. Verify cooling loads and other specific requirements with the equipment manufacturer on a specific project.
- Route all ductwork in vault down maze and over door to avoid radiation scatter.
- A linear accelerator chiller is provided by the linear accelerator manufacturer. Install this chiller in accordance with the linear accelerator manufacturer's requirements.
- Refer to HVAC Design Manual for additional information.

PLUMBING AND MEDICAL GASES

Yes
Yes
Yes
Yes
Yes
Yes



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LINEAR ACCELERATOR (IMRT) Room (XTLA1): Equipment Guide List

JSN	NAME	QTY	ACQ / INS	DESCRIPTION	SPEC
A1010	Telecommunication Outlet	AR	CC	Telecommunication outlet location.	27 31 00
A1015	Telephone, Desk, Multiple Line	1	CC	Telephone, desk, multiple line.	27 31 00
A5075	Dispenser, Soap, Disposable	1	W	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.	
A5080	Dispenser, Paper Towel, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, single-fold, paper towel dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 400 single-fold paper towels. For general purpose use throughout the facility.	10 28 00
A5106	Waste Disposal Unit, Sharps w/Glove Dispenser	1	W	The unit is designed for the disposal of sharps and complies with OSHA guidelines for the handling of sharps. It shall house a 5 quart container and be capable of being mounted on a wall. It shall have a glove dispenser attached. The unit shall be secured by a locked enclosure.	
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.	10 28 00
C03F0	Cabinet, U/C/B, 1 Shelf, 2 Half DR, 2 DO, 36x30x22	AR	CC	Standing height under counter base cabinet with an adjustable shelf and two half width drawers above solid hinged doors. Also referred to as a combination cabinet or a drawer and cupboard cabinet. For general purpose use throughout the facility.	12 32 00
C03H0	Cabinet, U/C/B, 2 Half Drawers, 3 DR, 36x30x22	AR	CC	Standing height under counter base cabinet with two half width drawers side-by-side above three full width drawers. Also referred to as a drawer cabinet. For general purpose use throughout the facility.	12 32 00
C03J0	Cabinet, U/C/B, 8 Half Drawers, 36x30x22	AR	CC	Standing height under counter base cabinet with eight half width drawers of equal height. Also referred to as a drawer cabinet. For general purpose use throughout the facility.	12 32 00
C03P0	Cabinet, Sink, U/C/B, 2 Door, 30" W	1	CC	Standing height under counter base sink cabinet. 36" H x 30" W x 22" D with two solid hinged doors. Also referred to as a double-door sink cabinet. For general purpose use throughout the facility where a sink is to be used. Coordinate actual clear cabinet dimension with the actual outside dimension of sink that is specified to ensure that they are compatible.	12 32 00
CE030	Cabinet, W/H, 2 SH, 2 GDO, Sloping Top, 38x30x13	AR	CC	Wall hung cabinet with two adjustable shelves, solid hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. For general purpose use throughout the facility.	12 32 00



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CR070	Cabinet, F/S, 5 Shelf, 1 DO, Sloping Top, 95x24x16	AR	CC	Floor standing storage cabinet with five adjustable shelves, a solid right or left-hinged door (appropriate door hinge configuration to be indicated on equipment elevation drawings), and sloping top. Also referred to as a tall case or a tall cabinet. For general purpose storage use throughout the facility.	12 32 00
CS150	Sink, SS, Single Compartment, 10x19x16 ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.	22 44 00
CT030	Countertop, High Pressure Laminate	AR	cc	High pressure laminate countertop (composition of wood particle core with plastic laminate surface) having a hard smooth surface finish, standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a wide choice of colors, patterns, and depths. Used in general purpose areas requiring a basic work surface arrangement with limited heat resistance and poor chemical resistance. Pricing based upon a 24" depth.	12 36 00
F2000	Basket, Wastepaper, Round, Metal	1	W	Round wastepaper basket, approximately 18" high X 16" diameter. This metal unit is used to collect and temporarily store small quantities of paper refuse in patient rooms, administrative areas and nursing stations.	
F0355	Footstool, Straight	1	W	Step stool. Used to assist patients getting on and off exam or surgical tables. Fitted with electrically conductive rubber tips.	
F2250	Camera, Portable, CCTV, With Recorder	1	W	Portable camera/recorder (camcorder) with video-out capacity to accommodate a remote recorder.	
F3200	Clock, Battery, 12" Diameter	1	W	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).	
M0750	Flowmeter, Air, Connect w/50 PSI Supply	1	W	Air flowmeter. Unit has a stainless steel needle valve with clear flowtube for connection to 50 PSI air outlet from central pipeline system. Requires the appropriate adapter for connection to the wall outlet and fitting to connect to tubing. Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.	
M0755	Flowmeter, Oxygen, Low Flow	1	W	Oxygen flowmeter. Consists of a clear crystal flowtube calibrated to 3.5 or 8 LPM depending on manufacturer. For oxygen regulation in hospital settings. Database pricing includes DISS fitting and DISS power outlet and wall adapter. Other fitting and adapter configurations are available.	



M0765	Regulator, Vacuum	1	W	An air/oxygen mixer is designed to accurately control a pressurized gas mixing with an oxygen concentration. Unit contains audible alarms to warn of supply failure, an auxiliary outlet and a oxygen concentration control adjustment range from 21% to 100%. The unit can also be used to supply an accurate pre-mixed gas source to respiration or ventilator units. A specific application may require an additional air inlet filter/water trap.
M3072	Frame, Infectious Waste Bag w/Lid	1	W	Frame for an infectious waste collection bag. Made of heavy tubular stainless steel with heavy gauge welded steel platform. Adjust to hold 18" or 25" trash bags. Mounted on ball bearing casters and includes permanently mounted hinged lid. Provides means of bagging infectious waste at point of waste generation.
M4255	Stand, IV, Adjustable	1	W	Adjustable IV stand with 4-hook arrangement. Stand has stainless steel construction with heavy weight base. It adjusts from 66 inches to 100 inches and is mounted on conductive rubber, ball bearing, swivel casters. Stand is used for administering intravenous solutions.
X1415	Laser Positioning System, Patient-Wall	2	CF	Laser positioning system. This unit is designed for accurate patient alignment for radiation therapy. Three vertical laser beams and a horizontal beam intersect to define the iso-center to aid in patient positioning. The unit is generally supplied as a component of various radiation therapy systems.
X2100	Scanner, Ultrasound, General Purpose	1	CF	High definition, diagnostic ultrasound system for Radiology, Cardiology, Vascular, ob-gyn, Perinatology, and Surgical imaging applications. The unit employs curved, phased and linear array imaging technology. The system supports colorflow, pulse and continuous wave imaging modalities. On board software measurement packages available for all imaging applications. The system is DICOM 3.0 compatible, for easy linkage to filmless image management systems and review stations. In addition, a full line of probes and conventional recording devices are available.
X3150	Rack, Apron/Gloves, Wall Mounted	1	CC	Apron and gloves rack. This is a wall unit which holds aprons and gloves. The body is heavy gauge steel finish in gray or green baked enamel, glove and apron holding arms are aluminum. The unit's convenient on wall storage will prolong the useful life of your protection aprons by helping prevent damage to internal components.

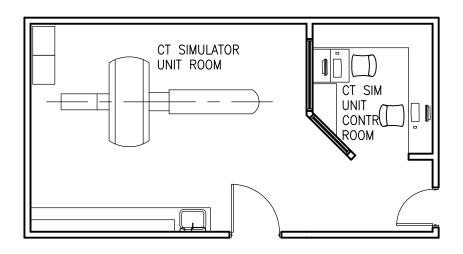
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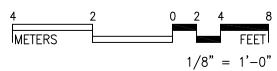
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X6196	Injector, CT	1	CF	CT injector. This unit is a specialized radiographic system that provides sharp, well-defined visual images of the vascular anatomy. The injector introduces a vision radiopaque fluid (contrast medium) into an artery or vein through a small catheter, making vessels contrast with their more radiolucent surrounding. The unit incorporates an electromechanical or pneumatically driven syringe to deliver the contrast medium. The syringe assemblies consist of an electric motor connected to a jackscrew that moves the syringe piston into or out of the syringe barrel. The unit is used in hospitals with radiographic procedures. The unit can be ceiling, wall, or remote stand mounted.	
X8710	Accelerator, Linear, 6 MeV	1	CF	This system is a 6 MeV linear accelerator. The linear accelerator consists of four major components: a modulator, an electron gun, a radio frequency (RF) power source and an accelerator gun. The system emits a well-defined beam of uniformly intense radiation energy used to treat deep seated neoplasms and tumors.	

CT Suite

Key Plan







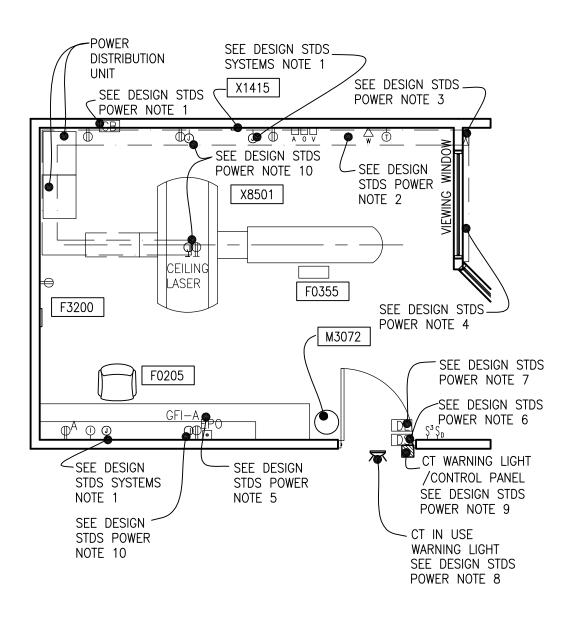
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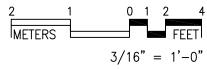
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CT Simulator Unit Room (XTSG1)

400 NSF

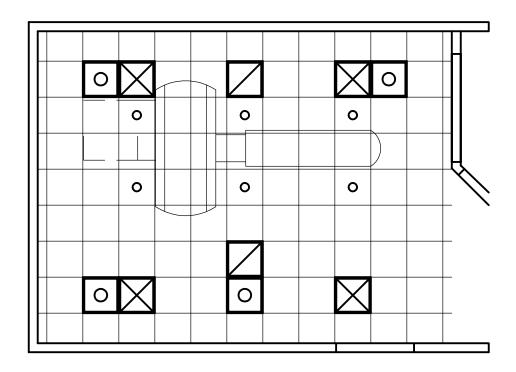
Floor Plan 37.2 NSM

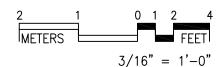






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CT Simulator Unit Room (XTSG1)	400 NSF
Reflected Ceiling Plan	37.2 NSM





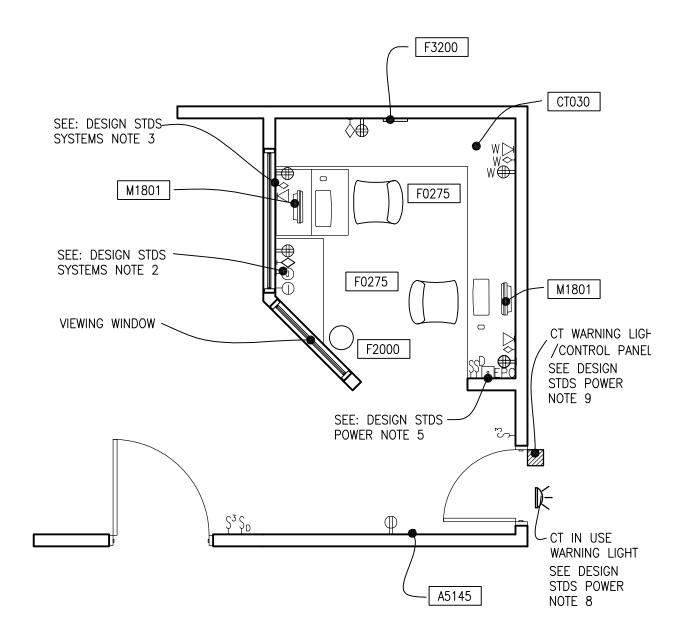
The locations and quantities of the air outlets and inlets are tentative and may not represent the optimum design solution(s) envisioned by the designer, who shall study the layout, calculate air volumes, and may alter the arrangement shown in the reflected ceiling plan, as required, to produce a project—specific air distribution system design.

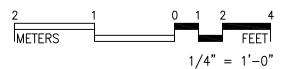


CT Simulator Unit Control Area (XTSC1)

175 NSF

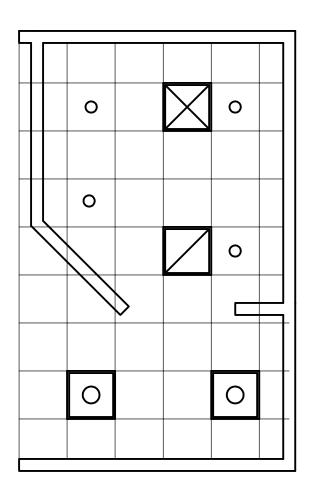
Floor Plan 16.3 NSM

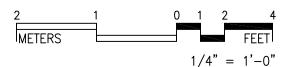






Radiation Therapy Service Design Guide	April 2008
CT Simulator Unit Control Area (XTSC1)	175 NSF
Reflected Ceiling Plan	16.3 NSM





The locations and quantities of the air outlets and inlets are tentative and may not represent the optimum design solution(s) envisioned by the designer, who shall study the layout, calculate air volumes, and may alter the arrangement shown in the reflected ceiling plan, as required, to produce a project—specific air distribution system design.



CT SIMULATOR UNIT ROOM (XTSG1 & XTSC1) Design Standards

ARCHITECTURAL

Ceiling: Acoustical Tile Ceiling
Ceiling Height: Coordinate with
Equip. Manuf.

Wall Finish:

Wainscot:

Base:

Vinyl Base
Floor Finish:

Vinyl Composition Tile
Sound Protection:

Notes:

- 1. Provide a 4'-0" wide shielded door into the CT Scanning Room
- 2. Provide a shielded viewing window from CT Control Room to the CT Scanning Room.

LIGHTING

Simulator Room

General: Fluorescent lights will provide higher illumination level up to 50 FC during patient transfer on and from the table, equipment setting, room cleaning, and equipment maintenance.

Special: Incandescent dimmable luminaires controlled by dimmer will provide lower illumination levels down to 5 FC during the laser positioning and examination. Luminaires shall be located to avoid direct glare for patient comfort.

Control Room

General: Fluorescent lights will provide illumination level up to 30 FC.

Special: Incandescent luminaires controlled by dimmer will provide lower illumination levels down to 5 FC during scanning for monitor viewing.

Notes:

- 2'x2' fluorescent recessed luminaire, acrylic prismatic lens, with (2) FB031T8-U lamps, 4100 K, CRI=85 (minimum).
- 2. 8-inch dia., recessed incandescent downlight, with recessed Fresnel lens, and 150W/A21 inc. horizontally mounted lamp.

- 3. 3-way switch for Simulator Room fluorescent lighting control; located at entrance door and in control area
- 4. Dimmer for Simulator Room incandescent downlights control.

POWER

General: The electrical power as shown is to be used as a guide only. Equipment locations, dimensions and wiring requirements should be per the CT Simulator system suppliers' equipment drawings. Electrical trades should provide necessary conduits, openings, bushings, nipples, flexible conduits, surface, recessed, wall mounted and floor raceways, etc., as required at the various junction boxes, duct and conduit terminations to allow proper connections of the simulator equipment and related accessories.

Emergency: Emergency power for Simulator equipment, controls, and selected receptacles as determined by the Hospital

Notes:

- 1. 480V, 3P-150A circuit breaker, with adjustable trip, shunt trip, flush mounted. Run empty 50 mm (2°C) from circuit breaker to the floor duct.
- 2. 12" W x 3-1/2" D multi-compartment flush floor duct with screw-on cover. Connect to vertical wall duct.
- 3. 10" W x 3-1/2" D multi-compartment surface vertical wall duct with screw-on cover. Connect to CT floor duct and horizontal wall duct.
- 4. 4-3/4" W x 3-1/2" D multi-compartment surface wall duct with screw-on cover. Connect to vertical wall duct.
- Emergency Power Off pushbutton station. Refer to specific radiology equipment requirements for EPO. Connect to shunt trip at main disconnect.
- Door switch with NO/NC contacts. Connect to CT system control circuit. CT should shut-off upon opening of the entrance door.



Guide Plates 4-15

- 7. Magnetic door interlock with CT controller to prevent interruption of scanning procedure (optional).
- 8. Warning light with wording "CT IN USE, DO NOT ENTER". Provide interface with CT controller via interface relay.
- CT warning light interface relay with low voltage power supply to match CT equipment requirements.
- Laser positioning light interlocked with room lighting and set-up lights; provide adjacent receptacle

COMMUNICATION/SPECIAL SYSTEMS

ADP:	Yes
Data:	Yes
Telephone:	Yes
Intercom:	Yes
Nurse Call:	
Public Address:	
Radio/Entertainment:	
MATV:	
CCTV:	Yes
MID:	
Security/Duress:	
VTEL:	
VA Satellite TV:	

Notes:

- Junction box for CCTV camera with conduit to Control area.
- 2. Junction box for CCTV monitor.
- 3. PACS:two 4-port telecommunication outlets per PACS station.

HEATING, VENTILATING AND AIR CONDITIONING

Inside Design Conditions:

70°F to 75°F (21°C to 24°C)

30% to 60% Relative Humidity

Minimum Air Changes per Hour – Supply Air:

6 for CT Simulator Unit

Room and CT Control Room

100 % Exhaust: No 100% Outside Air: No

Room Air Balance: Positive for All Rooms
Dedicated Exhaust System: No

Occupancy: 4 for CT Simulator Unit Room

2 for CT Control Room

AC Load-Equipment: 17,000 Btuh to 22,000 Btuh (5,000 W to 6,500 W) for CT Simulator Unit Room

4,000 Btuh to 8,500 Btuh (1,200 W to 2,500 W) for CT Control Room

AC Load-Lighting: 2.0 W/SF (21 W/M²) in CT Simulator Unit Room

1.5 W/SF (17 W/M²) in CT Control Room

Notes:

- 1. Verify cooling loads and other specific requirements with the equipment manufacturer on a specific project.
- 2. Certain CT manufacturers require and provide a dedicated CT Scanner chiller. Install two chillers in accordance with the CT manufacturer's requirements.

PLUMBING AND MEDICAL GASES

Cold Water:	
Hot Water:	
Laboratory Air:	
Laboratory Vacuum:	
Sanitary Drain:	
Reagent grade Water:	
Medical Air:	Yes
Medical Vacuum:	Yes
Oxygen:	Yes



Guide Plates 4-16

CT Simulator Unit Room (XTSG1 & XTSC1): Equipment Guide List

1. CT SIM	ULATOR UNIT ROOM ((XTSG1)			
JSN	NAME	QTY	ACQ / INS	DESCRIPTION	SPEC
A1010	Telecommunication Outlet	AR	CC	Telecommunication outlet location.	27 31 00
A1015	Telephone, Desk, Multiple Line	1	CC	Telephone, desk, multiple line.	27 31 00
A5145	Hook, Garment, Double, SS, Surface Mounted	AR	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.	10 28 00
A5180	Track, Cubicle, Surface Mounted, With Curtain	1	CC	Surface mounted cubicle track, with curtain. Track constructed of thick extruded aluminum. Equipped with self lubricating carriers, beaded drop chain hooks, and flame resistant curtain. To include removable end caps. Designed to be suspended around patient areas where privacy is needed. Price listed is per foot of the track, curtains to be priced per quote.	10 21 23
F0205	Chair, Side With Arms	1	W	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.	
F0355	Footstool, Straight	1	W	Step stool. Used to assist patients getting on and off exam or surgical tables. Fitted with electrically conductive rubber tips.	
F3200	Clock, Battery, 12" Diameter	1	W	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).	



M0750	Flowmeter, Air, Connect w/50 PSI Supply	1	W	Air flowmeter. Unit has a stainless steel needle valve with clear flowtube for connection to 50 PSI air outlet from central pipeline system. Requires the appropriate adapter for connection to the wall outlet and fitting to connect to tubing. Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.	15491
M0755	Flowmeter, Oxygen, Low Flow	1	W	Oxygen flowmeter. Consists of a clear crystal flowtube calibrated to 3.5 or 8 LPM depending on manufacturer. For oxygen regulation in hospital settings. Database pricing includes DISS fitting and DISS power outlet and wall adapter. Other fitting and adapter configurations are available.	15491
M0765	Regulator, Vacuum	1	W	An air/oxygen mixer is designed to accurately control a pressurized gas mixing with an oxygen concentration. Unit contains audible alarms to warn of supply failure, an auxiliary outlet and a oxygen concentration control adjustment range from 21% to 100%. The unit can also be used to supply an accurate pre-mixed gas source to respiration or ventilator units. A specific application may require an additional air inlet filter/water trap.	15491
M3072	Frame, Infectious Waste Bag w/Lid	1	W	Frame for an infectious waste collection bag. Made of heavy tubular stainless steel with heavy gauge welded steel platform. Adjust to hold 18" or 25" trash bags. Mounted on ball bearing casters and includes permanently mounted hinged lid. Provides means of bagging infectious waste at point of waste generation.	
M4255	Stand, IV, Adjustable	1	W	Adjustable IV stand with 4-hook arrangement. Stand has stainless steel construction with heavy weight base. It adjusts from 66 inches to 100 inches and is mounted on conductive rubber, ball bearing, swivel casters. Stand is used for administering intravenous solutions.	

X1415	Laser Positioning System, Patient-Wall	1	CF	Laser positioning system. This unit is designed for accurate patient alignment for radiation therapy. Three vertical laser beams and a horizontal beam intersect to define the iso-center to aid in patient positioning. The unit is generally supplied as a component of various radiation therapy systems.
X8501	Simulator, Therapy, X-Ray	1	CF	This system is specifically designed to simulate radiotherapy treatment plans in the Oncology Department. The characteristics and components include a precise mechanical system including digital fluoroscopic and radiographic x-ray capabilities and a flexible computer system. It shall have the capability to simulate any linear accelerator. Shall include a couch, collimator and accessories. Movements and scales shall be a match to other treatment machines to maintain their integrity of simulation for all cancer treatments. The system shall be DICOM RT compatible, for easy linkage to film-less image management systems and review stations.

JSN	NAME	QTY	ACQ / INS	DESCRIPTION	SPEC
A1010	Telecommunication Outlet	AR	CC	Telecommunication outlet location.	27 31 00
A1015	Telephone, Desk, Multiple Line	1	CC	Telephone, desk, multiple line.	27 31 00
A5145	Hook, Garment, Double, SS, Surface Mounted	1		A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.	10 28 00
C0041	Rail, Apron, 4x60x1	Only if X 8501 doesn't come with console	С	Apron rail. Also referred to as an apron front, apron panel, or knee space rail. Used to close in front knee space area and/or provide work surface support between two base cabinets or a base cabinet and wall. Apron rails should be ordered in pairs to provide both front and rear work surface support.	12 32 00



Radiation Therapy Service Design **April 2008** C0045 Frame, Apron, 1 Drawer, Only if X CC Apron frame with one 12 32 00 4x36x22 8501 standard drawer. Also doesn't referred to as a drawer come with frame or table frame. Used console for a knee space as a combination frame and drawer to support a top between base cabinets or a base cabinet and a wall. C06M0 Cabinet, U/C/B, 1 PBD, 2 Only if X CC Cabinet, U/C/B, 1 PBD, 2 12 32 00 DR, 1 File DR, 30x18x22 8501 DR, 1 File DR, 30x18x22 doesn't come with console CT030 Only if X CC 12 36 00 Countertop, High Pressure High pressure laminate countertop (composition of Laminate 8501 doesn't wood particle core with come with plastic laminate surface) console having a hard smooth surface finish, standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a wide choice of colors, patterns, and depths. Used in general purpose areas requiring a basic work surface arrangement with limited heat resistance and poor chemical resistance. Pricing based upon a 24" depth. F0275 Chair, Swivel, High Back 2 W Highback contemporary swivel chair, 41" high X 23" wide X 23" deep with five (5) caster swivel base and arms. Chair may be used at desks or in conference rooms. Back and seat are foam padded and upholstered with either woven textile fabric or vinyl. Basket, Wastepaper, F2000 W Round wastepaper basket. approximately 18" high X 16" Round, Metal diameter. This metal unit is used to collect and temporarily store small quantities of paper refuse in patient rooms, administrative areas and nursing stations. F3200 Clock, Battery, 12" W Clock, 12" diameter. Round Diameter surface, easy to read numbers with sweep second hand. Wall mounted unit for



use when impractical to install a fully synchronized clock system. Battery operated, (batteries not

included).

Radiation Therapy Service Design

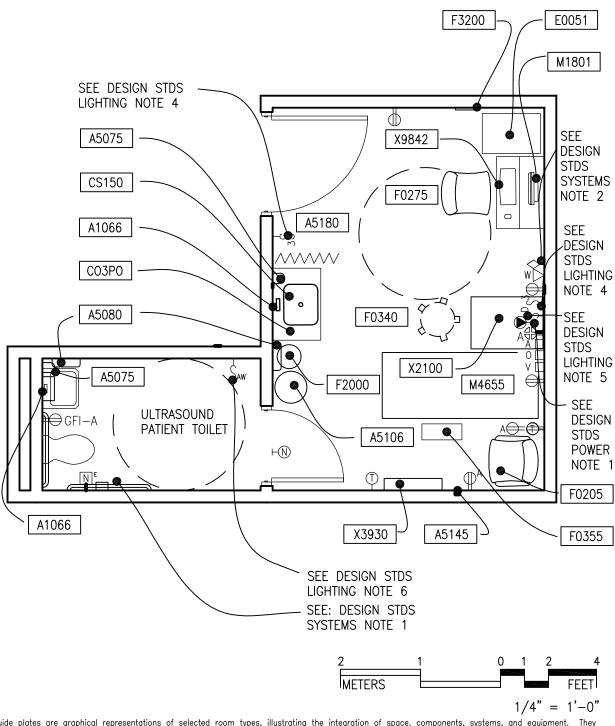
April 2008

M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	W	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; a 3.5" floppy drive; 1.44MB network interface card; video 32 MB NVIDIA; a 15 inch flat panel color monitor. The computer is used throughout the facility to input, manipulate and retrieve information.
M1840	Printer/Copier/Fax Combination	1	VV	Multifunctional printer, fax, scanner and copier (PFC) all-in-one machine.
X 8501- Components of Parent Item	Components of Parent Item: CT Simulator Equipment: may include electronic station, and operator console and computer	1	W	This system is specifically designed to simulate radiotherapy treatment plans in the Oncology Department. The characteristics and components include a precise mechanical system including digital fluoroscopic and radiographic x-ray capabilities and a flexible computer system. It shall have the capability to simulate any linear accelerator. Shall include a couch, collimator and accessories. Movements and scales shall be a match to other treatment machines to maintain their integrity of simulation for all cancer treatments. The system shall be DICOM RT compatible, for easy linkage to film-less image management systems and review stations.

Ultrasound Planning Unit Room (XDUS1)

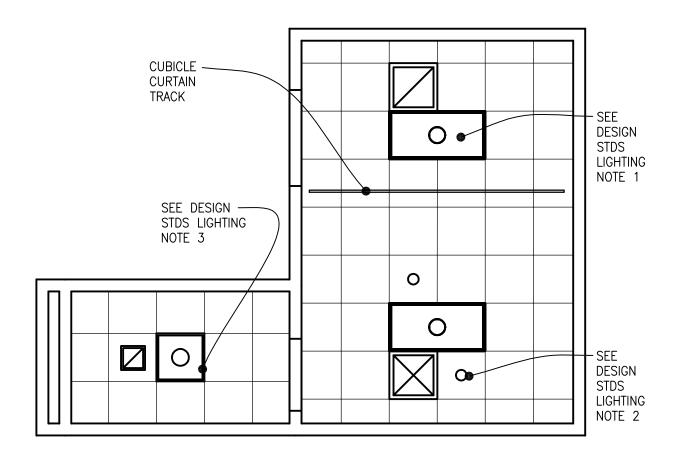
225 NSF

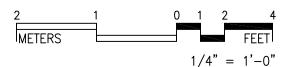
Floor Plan 20.9 NSM





Radiation Therapy Service Design Guide	April 2008
Ultrasound Planning Unit Room (XDUS1)	225 NSF
Reflected Ceiling Plan	20.9 NSM





The locations and quantities of the air outlets and inlets are tentative and may not represent the optimum design solution(s) envisioned by the designer, who shall study the layout, calculate air volumes, and may alter the arrangement shown in the reflected ceiling plan, as required, to produce a project—specific air distribution system design.



ULTRASOUND PLANNING UNIT ROOM (XDUS1): Design Standards

ARCHITECTURAL

Ceiling: Acoustical Tile Ceiling
Ceiling Height: Coordinate with

Equipment Manufacturer

Wall Finish: Paint
Wainscot: -Base: Vinyl
Floor Finish: Vinyl Composition Tile
Sound Protection: --

Notes:

1. Provide a 4'-0" wide door into the Ultrasound Planning Unit Room.

LIGHTING

Ultrasound Planning Room

General: Fluorescent lights will provide illumination level 30-40 FC during patient transfer on and from the table, equipment setting, room cleaning, and equipment maintenance.

Special: Incandescent luminaires controlled by dimmer will provide lower illumination levels down to 5 FC during scanning. Warmer light color will enhance skin appearance and patient comfort. Luminaires shall be located to avoid direct glare for patient comfort.

Toilet Room

Fluorescent light will provide illumination up to 20 FC.

Notes:

- 2'x4' fluorescent recessed luminaire, acrylic prismatic lens, with (3) F32T8 lamps, 4100 K, CRI=85 (minimum)
- 8-inch dia., recessed incandescent downlight, with recessed Fresnel lens, and 150W/A21 inc. horizontally mounted lamp.
- 3. 2'x2' fluorescent recessed luminaire, acrylic prismatic lens, with (3) F14T5 lamps, 4100 K, CRI=85 (minimum)
- 3-way switch for fluorescent lights control, located at entrance door and at control area
- 5. Dimmer for incandescent downlights control

6. Occupancy sensor for automatic light control; switchbox type, wall mounted

POWER

General: The electrical power as shown is to be used as a guide only. Equipment locations, dimensions and wiring requirements should be per the ultrasound system suppliers' equipment drawings. Electrical trades should provide necessary raceways as required to allow proper connections of the ultrasound equipment and related accessories.

Notes:

 Special receptacle to match equipment requirements.

COMMUNICATION/SPECIAL SYSTEMS

ADP:	Yes
Data:	Yes
Telephone:	Yes
Intercom:	
Nurse Call:	Yes
Public Address:	
Radio/Entertainment:	
MATV:	
CCTV:	
MID:	
Security/Duress:	
VTEL:	
VA Satellite TV:	

Notes:

- Nurse call in toilet room to annunciate at local reception desk and outside of the toilet room.
- 4-port telecommunication outlet for PACS station

HEATING, VENTILATING AND AIR CONDITIONING

Inside Design Conditions:

70°F to 75°F (21°C to 24C°) 30% to 60% Relative Humidity

Minimum Air Changes Per Hour – Supply Air:

8 for Ultrasound Planning Room

100% Exhaust: Toilet Room 100% Outside Air: No

Room Air Balance:

Positive for Ultrasound Planning Room



Guide Plates 4-24

Negative for Toilet Room

Dedicated Exhaust System: No Occupancy: 3

AC Load-Equipment: 3,600 Btuh to 4,800 Btuh

(1,050W to 1,400W)

AC Load-Lighting: 1.1 W/SF (12 W/M²⁾ in

Ultrasound Planning Room

Notes:

1. Verify cooling loads and other specific requirements with the equipment manufacturer on a specific project.

PLUMBING AND MEDICAL GASES

Cold Water: Yes
Hot Water: Yes
Laboratory Air: -Laboratory Vacuum: -Sanitary Drain: Yes
Reagent grade Water: -Medical Air: Yes
Medical Vacuum: Yes
Oxygen: Yes



ULTRASOUND PLANNING UNIT ROOM (XDUS1): Equipment Guide List

JSN	NAME	QTY	ACQ / INS	DESCRIPTION	SPEC
A1010	Telecommunication Outlet	1	CC	Telecommunication outlet location.	27 31 00
A1012	Telephone, Wall Mounted, 1 Line	1	CC	Telephone, wall mounted, 1 line.	27 31 00
A1066	Mirror, Float Glass, With SS Frame, 36x18	1	CC	A high quality 1/4" polished float glass mirror 36X18, framed in a one-piece, bright polished, stainless steel channel frame with 90° mitered corners. All edges of the mirror are protected by absorbing filler strips. Mirror has a galvanized steel back with integral horizontal hanging brackets and wall hanger for concealed mounting. For mounting above single wall mounted lavatories located in toilet areas, Doctors examination offices, etc. May also be used above double lavatories, either wall or countertop mounted, found in restroom areas.	10 28 00
A5075	Dispenser, Soap, Disposable	1	W	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.	
A5080	Dispenser, Paper Towel, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, singlefold, paper towel dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 400 singlefold paper towels. For general purpose use throughout the facility.	10 28 00
A5106	Waste Disposal Unit, Sharps w/Glove Dispenser	1	W	The unit is designed for the disposal of sharps and complies with OSHA guidelines for the handling of sharps. It shall house a 5 quart container and be capable of being mounted on a wall. It shall have a glove dispenser attached. The unit shall be secured by a locked enclosure.	
A5145	Hook, Garment, Double, SS, Surface Mounted	1	cc	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.	10 28 00



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A5180	Track, Cubicle, Surface Mounted, With Curtain	1	CC	Surface mounted cubicle track, with curtain. Track constructed of thick extruded aluminum. Equipped with self lubricating carriers, beaded drop chain hooks, and flame resistant curtain. To include removable end caps. Designed to be suspended around patient areas where privacy is needed. Price listed is per foot of the track, curtains to be priced per quote.	10 21 16
C03F0	Cabinet, U/C/B, 1 Shelf, 2 Half DR, 2 DO, 36x30x22	1	СС	Standing height under counter base cabinet with an adjustable shelf and two half width drawers above solid hinged doors. Also referred to as a combination cabinet or a drawer and cupboard cabinet. For general purpose use throughout the facility.	12 32 00
C03P0	Cabinet, Sink, U/C/B, 2 Door, 30" W	1	CC	Standing height under counter base sink cabinet. 36" H x 30" W x 22" D with two solid hinged doors. Also referred to as a double-door sink cabinet. For general purpose use throughout the facility where a sink is to be used. Coordinate actual clear cabinet dimension with the actual outside dimension of sink that is specified to ensure that they are compatible.	22 44 00
CE030	Cabinet, W/H, 2 SH, 2 GDO, Sloping Top, 38x30x13	1	CC	Wall hung cabinet with two adjustable shelves, solid hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. For general purpose use throughout the facility.	22 44 00
CS150	Sink, SS, Single Compartment, 10x19x16 ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.	22 44 00



Radiatio	n Therapy Service Desig	gn Guide		A	oril 2008
CT030	Countertop, High Pressure Laminate	5	CC	High pressure laminate countertop (composition of wood particle core with plastic laminate surface) having a hard smooth surface finish, standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a wide choice of colors, patterns, and depths. Used in general purpose areas requiring a basic work surface arrangement with limited heat resistance and poor chemical resistance. Pricing based	12 36 00
E0051	Workstation, Corner Work Surface, Wall Mtd, 72x48	2	W	upon a 24" depth. THIS TYPICAL INCLUDES: 4 VERTICAL HANGING STRIPS 2 LOCKABLE FLIPPER UNITS 2 SHELF, STORAGE/DISPLAY 2 LIGHT 1 TACKBOARD 2 TOOL RAIL 2 PAPER TRAY 1 DIAGONAL TRAY 1 CANTILEVERED WORK SURFACE 1 ADJUSTABLE KEYBOARD TRAY 1 MOBILE PEDESTAL, BOX/FILE 1 CPU HOLDER	
F0205	Chair, Side With Arms	1	W	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.	
F0275	Chair, Swivel, High Back	2	W	Highback contemporary swivel chair, 41" high X 23" wide X 23" deep with five (5) caster swivel base and arms. Chair may be used at desks or in conference rooms. Back and seat are foam padded and upholstered with either woven textile fabric or vinyl.	



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I 50040	Ctool Colf Adjusting	1 4	I 147	Colf adjusting steel Consists	
F0340	Stool, Self Adjusting	1	W	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.	
F0355	Footstool, Straight	1	W	Step stool. Used to assist patients getting on and off exam or surgical tables. Fitted with electrically conductive rubber tips.	
F2000	Basket, Wastepaper, Round, Metal	1	W	Round wastepaper basket, approximately 18" high X 16" diameter. This metal unit is used to collect and temporarily store small quantities of paper refuse in patient rooms, administrative areas and nursing stations.	
F3200	Clock, Battery, 12" Diameter	1	W	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).	
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	W	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; a 3.5" floppy drive; 1.44MB network interface card; video 32 MB NVIDIA; a 15 inch flat panel color monitor. The computer is used throughout the facility to input, manipulate and retrieve information.	
M4655	Stretcher, Mobile, CRS, 9 Position	1	W	Mobile stretcher. All corrosion resistant stainless steel construction. It consists of a tubular frame with side rails, a 9-position hydraulic base with pneumatic fowler adjustment, and a 2" pad. Unit is mounted on 8" conductive casters. Designed for patient transport as well as for minor surgical procedures.	

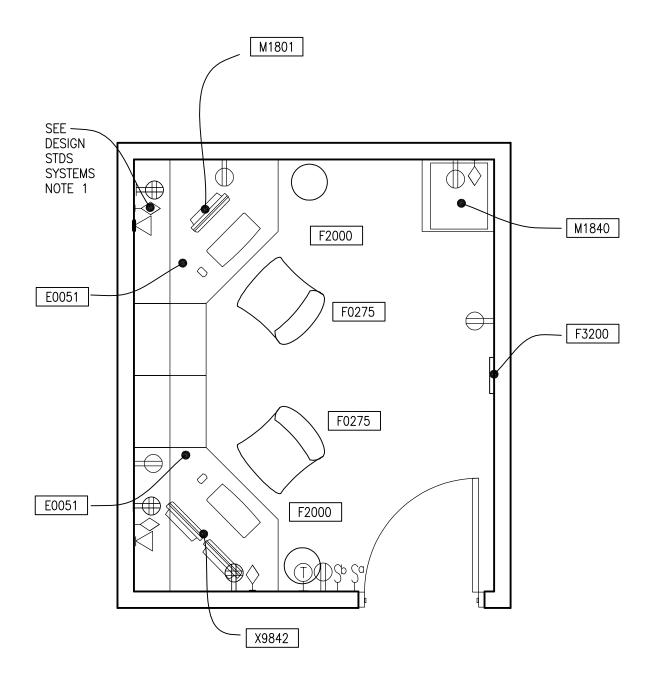


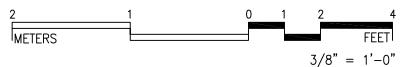
Radiation Therapy Service Design Guide

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		•		•	
X2100	Scanner, Ultrasound, General Purpose	1	W	High definition, diagnostic ultrasound system for Radiology, Cardiology, Vascular, ob-gyn, Perinatology, and Surgical imaging applications. The unit employs curved, phased and linear array imaging technology. The system supports colorflow, pulse and continuous wave imaging modalities. On board software measurement packages available for all imaging applications. The system is DICOM 3.0 compatible, for easy linkage to filmless image management systems and review stations. In addition, a full line of probes and conventional recording devices are available.	
X3930	Illuminator, Film, Double, Wall Mounted	1	W	X-ray film illuminator approximately 20' H x 29' W x 6" D. This is a double, wall mounted type unit with a continuous viewing surface. The tension film grips are adjustable top and bottom with standard grip strip. The unit's balanced-light viewing is assured by the 32W circular fluorescent lamp. It provides 500 feet candles of cool operation across the entire 14" X 17" viewing surface. It is available with or without film-activated switch. The unit can be used in hospitals, examining rooms, satellite office or lab.	
X9842	Computer, Rad Therapy Treatment Planning	1	W	The treatment planning computer must provide a total system three dimensional configuration that provides enhanced visualization of the radiation beam target volume, patient anatomy, treatment beam data and dose distribution. The system must be capable of brachytherapy treatment planning, using both linear and seed source. As a minimum shall include the optional CT/MR interface via Ethernet, a second remote work station and graphic work station.	

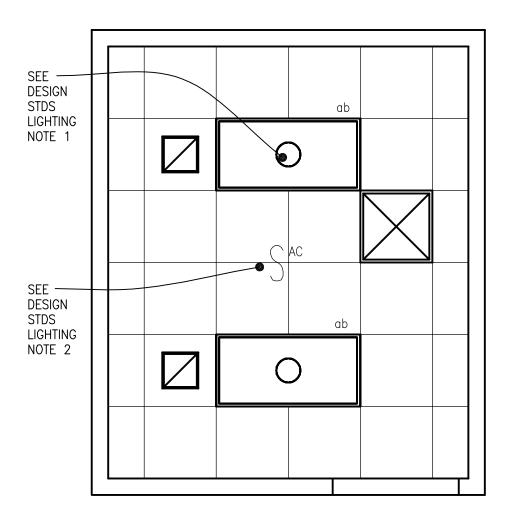
Treatment Planning Computer Room/Dosimetry Room (XTTP1) 125 NSF Floor Plan 11.6 NSM







Treatment Planning Computer Room/Dosimetry Room (XTTP1) 125 NSF Reflected Ceiling Plan 11.6 NSM





The locations and quantities of the air outlets and inlets are tentative and may not represent the optimum design solution(s) envisioned by the designer, who shall study the layout, calculate air volumes, and may alter the arrangement shown in the reflected ceiling plan, as required, to produce a project—specific air distribution system design.



TREATMENT PLANNING COMPUTER ROOM / DOSIMETRY ROOM (XTTP1):

Design Standards

ARCHITECTURAL

Ceiling: Acoustical Tile Ceiling
Ceiling Height: 8'-0"
Wall Finish: Paint
Wainscot: -Base: Vinyl
Floor Finish: Vinyl Composition Tile
Sound Protection: --

LIGHTING

General: Fluorescent lights provide illumination level up to 30 FC.

Special: Luminaires are dual switched with step dimming ballasts for multi-level illumination

Notes:

- 2'x4' fluorescent recessed direct/indirect luminaire, perforated metal shield with overlay, with (2) F28T5 lamps, 4100 K, CRI=85 (minimum).
- 2. Occupancy sensor for automatic light control, ceiling mounted.

POWER

Notes:

1. Emergency power and local UPS unit to be provided as required by hospital.

COMMUNICATION/SPECIAL SYSTEMS

ADP:	Yes
Data:	Yes
Telephone:	Yes
Intercom:	
Nurse Call:	
Public Address:	
Radio/Entertainment:	
MATV:	
CCTV:	
MID:	
Security/Duress:	
VTEL:	
VA Satellite TV:	

1. PACS: two 4-port communication outlets per PACS station.

HEATING, VENTILATING AND AIR CONDITIONING

Inside Design Conditions:

70° to 75°F (21°C to 24°C) 30% to 60% Relative Humidity Minimum Air Changes per Hour - Supply Air: 6 100% Exhaust: No 100% Outside Air: No Room Air Balance: Positive Dedicated Exhaust System: No Occupancy: AC Load-Equipment: 3500 Btuh (1000 W) AC Load-Lighting: 1.9 W/SF (20 W/M²)

Notes:

1. Verify cooling loads and other specific requirements with the equipment manufacturer on a specific project.

PLUMBING AND MEDICAL GASES

Cold Water: -Hot Water: -Laboratory Air: -Laboratory Vacuum: -Sanitary Drain: -Reagent grade Water: -Medical Air: -Medical Vacuum: -Oxygen: --

Notes:



Guide Plates 4-33

TREATMENT PLANNING COMPUTER ROOM / DOSIMETRY ROOM (XTTP1):

Equipment Guide List

JSN	NAME	QTY	ACQ / INS	DESCRIPTION	SPEC
A1010	Telecommunication Outlet	1	CC	Telecommunication outlet location.	27 31 00
A1015	Telephone, Desk, Multiple Line	1	CC	Telephone, desk, multiple line.	27 31 00
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.	10 28 00
E0051	Workstation, Corner Work Surface, Wall Mtd, 72x48	2	W	THIS TYPICALLYINCLUDES: 4 VERTICAL HANGING STRIPS 2 LOCKABLE FLIPPER UNITS 2 SHELF, STORAGE/DISPLAY 2 LIGHT 1 TACKBOARD 2 TOOL RAIL 2 PAPER TRAY 1 DIAGONAL TRAY 1 CANTILEVERED WORK SURFACE 1 ADJUSTABLE KEYBOARD TRAY 1 MOBILE PEDESTAL, BOX/FILE	
F0275	Chair, Swivel, High Back	2	W	1 CPU HOLDER Highback contemporary swivel chair, 41" high X 23" wide X 23" deep with five (5) caster swivel base and arms. Chair may be used at desks or in conference rooms. Back and seat are foam padded and upholstered with either woven textile fabric or vinyl.	



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F2000	Basket, Wastepaper, Round, Metal	2	W	Round wastepaper basket, approximately 18" high X 16" diameter. This metal unit is used to collect and temporarily store small quantities of paper refuse in patient rooms, administrative areas and nursing stations.
F3200	Clock, Battery, 12" Diameter	1		Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
X9842	Computer, Rad Therapy Treatment Planning	1	W	The treatment planning computer must provide a total system three dimensional configuration that provides enhanced visualization of the radiation beam target volume, patient anatomy, treatment beam data and dose distribution. The system must be capable of brachytherapy treatment planning, using both linear and seed source. As a minimum shall include the optional CT/MR interface via Ethernet, a second remote work station and graphic work station.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	W	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; a 3.5" floppy drive; 1.44MB network interface card; video 32 MB NVIDIA; a 15 inch flat panel color monitor. The computer is used throughout the facility to input, manipulate and retrieve information.
M1840	Printer/Copier/Fax Combination	1	W	Multifunctional printer, fax, scanner and copier (PFC) all-in-one machine.